ERRATA

Aircraft System Identification: Theory and Practice

by Vladislav Klein and Eugene A. Morelli

Known errors are listed below. Please report any other errors to e.a.morelli@nasa.gov.

Page	Correction
x	Line 5, (GLS) should be deleted.
37	The rotation matrices in Eq. (3.27) are incorrect. Eq. (3.27) should be: $$\begin{bmatrix} \dot{x}_E \\ \dot{y}_E \\ \dot{z}_E \end{bmatrix} = \begin{bmatrix} \cos\psi & -\sin\psi & 0 \\ \sin\psi & \cos\psi & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \cos\theta & 0 & \sin\theta \\ 0 & 1 & 0 \\ -\sin\theta & 0 & \cos\theta \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\phi & -\sin\phi \\ 0 & \sin\phi & \cos\phi \end{bmatrix} \begin{bmatrix} u \\ v \\ w \end{bmatrix}$$
63	At the far right of the first line in Eq. (3.110a), ΔC_D should be deleted. Eq. (3.110a) should be: $$\dot{V} = -\frac{\bar{q}_o S}{m}\left(C_{D_V}\frac{\Delta V}{V_o} + C_{D_\alpha}\Delta\alpha + C_{D_q}\frac{q\bar{c}}{2V_o} + C_{D_\delta}\Delta\delta \right)$$ $$- g\cos\gamma_o\left(\Delta\theta - \Delta\alpha\right) - \frac{T_o \sin\alpha_o}{m}\Delta\alpha$$
85	There should be a transpose on the second $\boldsymbol{\Phi}$ on the right side of Eq. (4.47). Eq. (4.47) should be: $$\boldsymbol{P}(i\,|\,i-1) = \boldsymbol{\Phi}(i-1)P(i-1\,|\,i-1)\boldsymbol{\Phi}^T(i-1) + \boldsymbol{\Gamma}_{\boldsymbol{w}}(i-1)\,\boldsymbol{Q}(i-1)\boldsymbol{\Gamma}_{\boldsymbol{w}}^T(i-1)$$
117	In the first sentence of the last paragraph, the word "variables" should be inserted after "independent". The first sentence of the last paragraph should be: For all flight test data sets and many wind tunnel data sets, the measured values of the independent variables are not uniformly spaced over an interval.

<table>
<tr><th>Page</th><th>Correction</th></tr>
<tr><td>144</td><td>The subscript for υ on the left side of Eq. (5.135) should be "z", not "2". Eq. (5.135) should be:
$$\upsilon_z(i) = z(i) - \hat{\theta}_0 - \hat{\theta}_1 \xi_1(i) \qquad i = 1, 2, \ldots, N$$</td></tr>
<tr><td>250</td><td>Some of the numbers in Table 7.3 are incorrect. Table 7.3 should be:

Table 7.3 Parameter estimation results for Schroeder sweep forced oscillation on an F-16XL 2.5 percent model
<table>
<tr><th></th><th colspan="2">Frequency-domain equation-error</th><th colspan="2">Frequency-domain output-error</th></tr>
<tr><th>Parameter</th><th>$\hat{\theta}$</th><th>$s(\hat{\theta})$</th><th>$\hat{\theta}$</th><th>$s(\hat{\theta})$</th></tr>
<tr><td>A</td><td>8.58×10^{-1}</td><td>3.25×10^{-2}</td><td>8.32×10^{-1}</td><td>3.44×10^{-2}</td></tr>
<tr><td>B</td><td>3.22×10^{0}</td><td>3.84×10^{-2}</td><td>3.21×10^{0}</td><td>3.17×10^{-2}</td></tr>
<tr><td>C</td><td>1.82×10^{-1}</td><td>7.05×10^{-2}</td><td>1.95×10^{-1}</td><td>2.80×10^{-2}</td></tr>
<tr><td>b_1</td><td>1.46×10^{-1}</td><td>2.64×10^{-2}</td><td>1.55×10^{-1}</td><td>1.19×10^{-2}</td></tr>
</table></td></tr>
<tr><td>379</td><td>There should not be a power of 2 applied to N in the denominator on the right side of Eq. (11.66). Eq. (11.66) should be:
$$\frac{1}{N}\sum_{i=0}^{N-1} u^2(i) = \frac{1}{N\sum_{i=0}^{N-1} w^2(i)} \sum_{k=0}^{N-1} U_w(k)\, U_w^*(k)$$</td></tr>
</table>